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News Release

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COVID-19 Infections in Healthcare Workers Fall After Single Dose of Moderna Vaccine

BOSTON – Within two weeks of providing the first dose of the Moderna COVID-19 vaccine to healthcare workers, infections fell by 95 percent when compared to those who were unvaccinated, according to research published today in JAMA Network Open by VA Boston Healthcare System researchers.

VA Boston HCS responded to a surge in COVID-19 cases in late December 2020, during which time a rising tide of healthcare workers began falling ill with COVID-19, creating challenges for healthcare delivery. At this critical moment, the Moderna vaccine became available, and through an intensive effort, more than 75 percent of VA Boston healthcare workers were vaccinated over a three-week period.

“Even during this short time, new COVID-19 cases in vaccinated healthcare workers fell precipitously, while continuing unabated in unvaccinated workers,” said lead author Dr. Kalpana Gupta, associate chief medical officer and chief of infectious diseases for the VA Boston HCS, and professor of medicine at Boston University. “Other recent studies reported early effectiveness of vaccination programs that offered Pfizer or Moderna vaccine to healthcare workers, but there were no comparable studies of Moderna vaccination alone. The availability of Moderna vaccine at a moment of high community transmission provided an opportunity to fill this gap in the research.”

During the six-week period of observation, 107 of 4,028 healthcare workers were diagnosed with COVID-19 infection. Overall, vaccination with Moderna vaccine reduced COVID-19 cases by 47 percent during the 28-day interval between the first and second doses. Because immunity develops gradually after vaccination, VA Boston HCS investigators wondered how quickly protection develops after a single dose of the Moderna vaccine. Surprisingly, vaccine effectiveness was 76 percent from day eight to day 42 and 95 percent from day 15 to day 42. In fact, there were no new COVID-19 cases at all in vaccinated healthcare workers between day 18 and day 42. A recent Mayo Clinic study of healthcare workers found similar results.

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“The high level of protection afforded by a single dose of Moderna vaccine suggests a potential benefit of rapid vaccination of healthcare workers to help sustain healthcare delivery during COVID-19 surges,” said Dr. Michael Charness, senior author, chief medical officer for the VA Boston HCS, and professor of neurology and associate dean at Harvard Medical School and Boston University.

The study did not examine the duration of benefit from a single dose of Moderna vaccine, because all healthcare workers received a second dose 28 days after the first. Importantly, the rapid development of protection in this study may not translate to other populations or viral variants and does not diminish the importance of precautions after vaccination, such as masking and social distancing.